

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
21 March 2002 (21.03.2002)

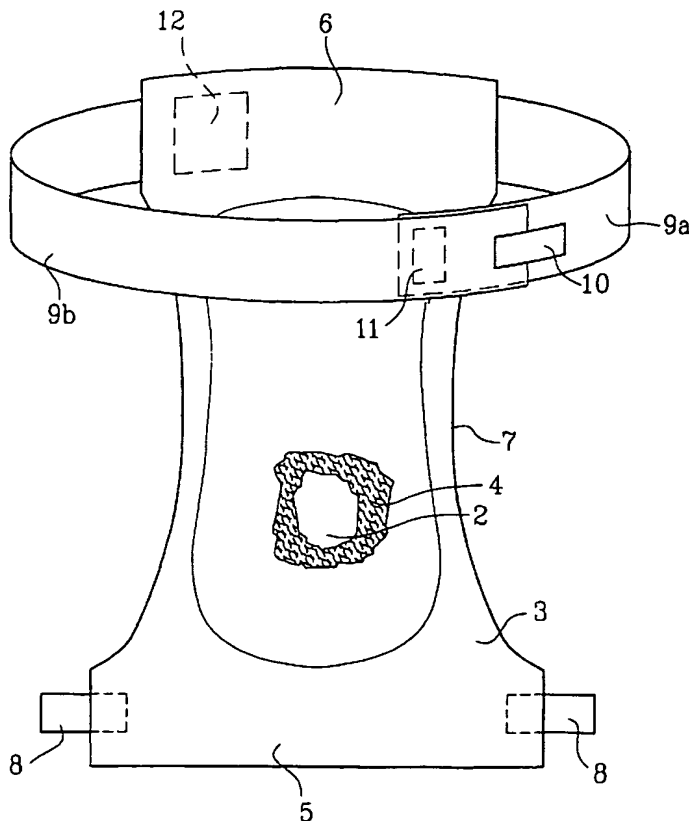
PCT

(10) International Publication Number  
WO 02/22063 A1

- (51) International Patent Classification<sup>7</sup>: A61F 13/64 (74) Agent: GÖTEBORGS PATENTBYRÅ DAHLS AB;  
Sjörporten 4, S-417 64 Göteborg (SE).
- (21) International Application Number: PCT/SE01/01947
- (22) International Filing Date:  
12 September 2001 (12.09.2001)
- (25) Filing Language: Swedish
- (26) Publication Language: English
- (30) Priority Data:  
0003251-6 13 September 2000 (13.09.2000) SE
- (71) Applicant: SCA HYGIENE PRODUCTS AB [SE/SE];  
S-405 03 Göteborg (SE).
- (72) Inventor: KARLSSON, Katharina; Flora 1123, S-438  
94 Härryda (SE).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AT (utility model), AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, CZ (utility model), DE, DE (utility model), DK, DK (utility model), DM, DZ, EC, EE, EE (utility model), ES, FI, FI (utility model), GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (utility model), SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF,

[Continued on next page]

(54) Title: ABSORBENT ARTICLE WITH WAISTBELT ADAPTED FOR DIFFERENT SIZES



(57) Abstract: Absorbent article such as a diaper and an incontinence guard comprising a pair of belt portions (9a, 9b) attached to the rear portion (6) alternatively the front portion (5) of the article and which are intended by means of first fastening means (10) to be fastened together around the waist of the wearer and where said front portion (5) alternatively said rear portion (6) is provided with fastening means (8), intended to be attached to the belt portions (9a, 9b), in such a way that the article will assume a pantlike shape, where the belt portions (9a, 9b) form a part of the waist portions of the pant, whereby the belt portions (9a, 9b) exhibit an inside portion intended to be faced towards the user and an outside portion intended to be faced away from the user. Said belt portion (9a) on its outside portion is provided with a second fastening means (11) adapted to cooperate with a reception surface (12) on the outside portion of the rear portion (6) of the article, alternatively the part of the opposite belt portion (9b) connecting to the rear portion (6).

WO 02/22063 A1

**WO 02/22063 A1**



CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**Published:**

— *with international search report*

Absorbent article with waistbelt adapted for different sizes.

5    *Technical field*

The present invention refers to an absorbent article such as a diaper and an incontinence guard comprising a liquid permeable topsheet, a liquid impermeable backsheet and an absorbent body enclosed therebetween, said article having a front portion, a rear portion and a crotch portion therebetween, and further is provided with a pair of belt portions  
10    attached to the rear portion, alternatively the front portion, of the article and which are intended to be fastened together around the waist of the wearer by means of the first fastening means and where said front portion, alternatively said rear portion, is provided with attachment means intended to be attached to the belt portions, in such a way that the article will assume a pantlike shape, where the belt portions form a part of the waist  
15    portions of the pant, wherein the belt portions exhibit an inside intended to be faced towards the user and an outside intended to be faced away from the user.

*Background of the invention*

Diapers and incontinence guards for incontinent adults usually have a garment portion  
20    holding an absorbent body in place against the user's body and attachment means which hold the garment portion in place also when the user is moving. A common type of attachment means are adhesive tapes or hook and loop fasteners of the touch-and-close type which directly attach the front and rear portions of the absorbent article to each other. It is further known, through e.g., EP-A-0 287 388, EP-A-0 409 307, EP-A-0 528 282, EP-  
25    A-0 605 012 and FR-A-2 586 558, to attach the front and rear portions of the article by means of a belt, at which the possibilities to adjust the fit are improved. The belt further provides a simplified change of diaper or incontinence guard, especially when the patient is standing up.

30    On a common type of belt diaper the belt portions are first attached around the waist on the patient and then the front portion of the diaper is attached to the outside of the belt using

hook and loop fasteners, which hook means are arranged on the front portion of the diaper, wherein the outside portions of the belt function as reception surface or loop material. One problem is that belts of this type have a limited flexibility regarding the possibility to adjust its length. If the belt is applied on a person having a small waist size, the belt portions will reach around the patient all the way to the material on the rear portion of the diaper, where the hook and loop fasteners can not attach. This leads to a poor fit. For a product of one size to fit persons having different waist sizes, it requires a belt allowing an improved adjustment of the waist size. On hospitals and elderly care is this of great importance, since the same diaper size could be used on as many patients as possible.

10

#### *Summary of the invention*

The object of the present invention is to accomplish a diaper or incontinence guard which can be used on persons having totally different waist sizes. This object is being solved in that one belt portion is provided with a second fastening means on its outside, which is adapted to cooperate with a reception surface on the outside of the rear portion of the article, alternatively to the part of the opposite belt portion connecting to said rear portion. Before the diaper is applied on a user having a small waist size, said one belt portion is folded against the rear portion of the diaper and is attached against the outside of this rear portion. The other belt portion is then alone used as a belt, giving a smaller waist size and has by means of a fastening means the possibility to attach on said back folded belt portion.

20

#### *Short description of drawings*

The invention will in the following be closer described with reference to an embodiment shown in the accompanying drawings.

Fig. 1 shows schematically a perspective view of a diaper or incontinence guard according to the invention.

25

Fig. 2 shows in a rear view the rear portion of a diaper according to Fig. 1.

#### *Description of an embodiment*

The drawings shows an embodiment of a diaper or incontinence guard 1 comprising a liquid impermeable backsheet 2, a liquid permeable topsheet 3 and an absorbent body 4

30

enclosed therebetween. The liquid permeable topsheet 3 can consist of a nonwoven material, e.g., a spunbond material of continuous filaments, a meltblown material, a bonded carded fibrous web or a perforated plastic film. The liquid impermeable backsheet 2 may consist of a plastic film, a nonwoven material coated with a liquid impervious material or a hydrophobic nonwoven material which resists liquid penetration. In the present invention the backsheet material consists of a plastic film, which can not function as an reception surface for the hook and loop fasteners.

The topsheet 3 and the backsheet material 2 have a somewhat greater extension in the plane than the absorbent body 4 and extend outside the edges thereof. The layers 2 and 3 are connected to each other within the projecting portions thereof, e.g., by gluing or welding by heat or ultrasonic.

The absorbent body 4 can be of any conventional kind. Examples of commonly occurring absorbent materials are cellulosic fluff pulp, tissue layers, highly absorbent polymers (so called superabsorbents), absorbent foam materials, absorbent nonwovens or the like. It is common to combine cellulosic fluff pulp with superabsorbents in an absorbent body. It is also common to have absorbent bodies comprising layers of different material with different properties with respect to liquid acquisition capacity, liquid distribution capacity and storage capacity. It is well-known to the person skilled in the art and does therefore not have to be described in detail. The thin absorbent bodies which are common in for example baby diapers and incontinence guards often comprise a compressed mixed or layered structure of cellulosic fluff pulp and superabsorbent.

The diaper/incontinence guard is intended to enclose the lower part of the wearer's trunk like a pair of absorbent pants. It comprises a front portion 5 intended during use to be worn on the front part of the user's body, a rear portion 6 intended during use to be worn on the rear part of the user's body, and a more narrow crotch portion 7 located between the front and rear portions and which is intended to be worn in the crotch part of the user between the legs.

A pair of belt portions 9a, 9b are with one end attached, e. g., glued or ultrasonically welded, to the rear portion 6 of the diaper. The belt portions 9a, 9b are with their opposite ends intended to be fastened together by means of first fastening means 10, comprising one part of a hook-and-loop type fastener and is provided with a surface having hook-material.

5 The outside portions of the belt portions 9 comprise the reception surface for the hook-material. This reception surface, the so-called loop-portion is preferably comprised of a non-woven material. The belt portions 9a, 9b consist of a loop material on both sides. The fastening means 8 of the front portion 5 is intended to be attached against the outsides of the belt portions 9 in order to fasten together the diaper/incontinence guard to the desired

10 pantlike shape. Said fastening means 8 may comprise hook and loop fastener or tape tabs.

According to an alternative embodiment the belt portions are attached to the front portion 5 of the diaper and thus are intended to be fastened together on the back of the wearer. The fastening means 8 are then arranged on the rear portion 6 of the diaper.

15

The width of the belt portions 9a, 9b should be between 5-20 cm, preferably between 7-15 cm.

The belt portions 9 are preferably a laminate of a carrier material, which forms the outside of the belt, and a soft nonwoven, which forms the inside of the belt, intended to be in direct contact with the skin of the user. A suitable nonwoven material can be a spunbond material of e.g., polypropylene- or polyethylene fibres. Conjugate fibres may also be used. Another suitable nonwoven material can be a carded thermobonded material of e.g., polypropylene-, polyester- or conjugate fibres. The carrier material should be adapted to function as a

20 reception surface for both the attachment means 8 and 10. Also elastic laminates are suitable to use as material in the belt portions.

25

The belt portions 9a, 9b have loop material on both sides. One belt portion, preferably the left belt portion 9a, is provided with a second fastening means 11, on the side which is

30 intended to be the outside of the belt. This second fastening means 11 preferably consists of a hook material. Before the diaper is applied on a user having a small waist size the belt

portion 9a is folded against the outside portion of the rear portion 6 of the diaper. A reception surface 12 is located on the outside of said rear portion. By means of said second fastening means 11 and said reception surface 12 the belt portion 9a is attached against said rear portion 6. The other belt portion 9b may now alone be used as a belt and has the possibility by means of first fastening means 10 to attach against said backfolded belt portion 9a.

This gives a size for said belt product which is smaller than the smallest possible size obtainable using both belt portions. If one wishes to use the product on a bigger person both belt portions 9a,9b are used just as normal, i.e., they are attached around the waist of the user primarily by means of first fastening means 10. One further advantage at normal use of the product i.e, that both fastening means 10, 11 may be used at application which gives a firmer positioning of the belt.

The reception surface 12 preferably consists of a loop material functioning as a reception surface for a hook material. The loop material may for example be a nonwoven material. Alternatively, the part of the belt portion 9b connecting to the rear portion may function as a reception surface 12 for the hook material on the belt portion 9a, whereby no special surface having loop material must be prepared on the back sheet material 2.

20

The reception surface 12 may also be comprised of a hook material whilst the second fastening means 11 is comprised of a loop material.

In another embodiment the second fastening means 11 on the left belt portions include a tape tab. This tape tab has the capability to attach anywhere on the backsheet material 2. Thereby is it also possible to regulate how much the left belt portion 9a is to be folded back, giving a flexibility in the regulation of the length of the belt.

The location of the fastening means 10, 11 may of course be the other way around, i.e., that the right belt portion 9b is folded back. However, since most people are right handed, the above described embodiments probably are the most preferred.

The diaper may now be adapted to different persons depending on their size with remained fit. It leads to a higher flexibility on for instance hospitals and homes for elderly people, when the same diaper size may be used to an increased number of persons.

- 5 The invention is of course not limited to the above described embodiment but can be modified within the scope of the claims.



## Claims

1. Absorbent article such as a diaper and an incontinence guard comprising a liquid permeable topsheet (3), a liquid impermeable backsheet (2) and an absorbent  
5 body (4) enclosed therebetween, said article having a front portion (5), a rear portion (6) and a crotch portion (7) therebetween, and further is provided with a pair of belt portions (9a, 9b) attached to the rear portion (6) alternatively the front portion (5) of the article and which are intended by means of first fastening means (10) to be fastened together around the waist of the wearer and where said front  
10 portion (5) alternatively said rear portion (6) is provided with fastening means (8), intended to be attached to the belt portions (9a, 9b), in such a way that the article will assume a pantlike shape, where the belt portions (9a, 9b) form a part of the waist portions of the pant, whereby the belt portions (9a, 9b) exhibit an inside portion intended to be faced towards the user and an outside portion intended to  
15 be faced away from the user,  
**characterized in,**  
that one belt portion (9a) on its outside portion is provided with a second fastening means (11) adapted to cooperate with a reception surface (12) on the  
20 outside portion of the rear portion (6) of the article, alternatively to the part of the opposite belt portion (9b) connecting to the rear portion (6).
2. Absorbent article according to claim 1,  
**characterized in,**  
that said second fastening means (11) is comprised of a hook material and said  
25 reception surface (12) is comprised of a loop material, which together form a hook and loop type fastener.
3. Absorbent article according to claim 1,  
**characterized in,**

that said second fastening means (11) is comprised of a loop material and said reception surface (12) is comprised of a hook material, which together form a hook and loop type fastener.

- 5     4.     Absorbent article according to claim 1,  
         **characterized in,**  
         that said second fastening means (11) is comprised of a tape tab and said  
         reception surface (12) is a part of the backsheet material (2) on the rear side of the  
         article.

10

5.     Absorbent article according to claim 1,  
         **characterized in,**  
         that said second fastening means (11) is comprised of a hook material and said  
         reception surface (12) is comprised of the second belt portion (9b), which  
15     together form a hook and loop type fastener.

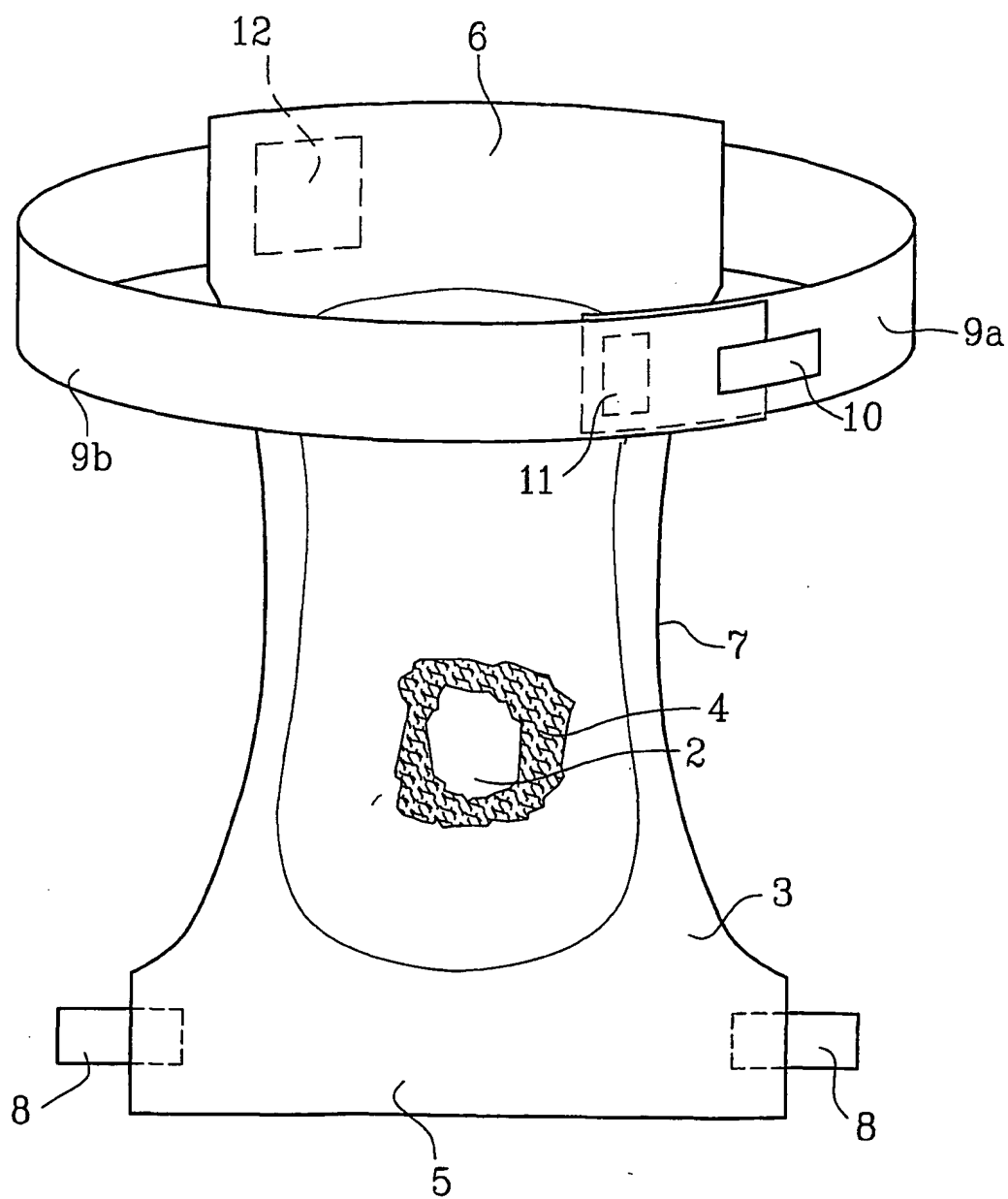


FIG. 1

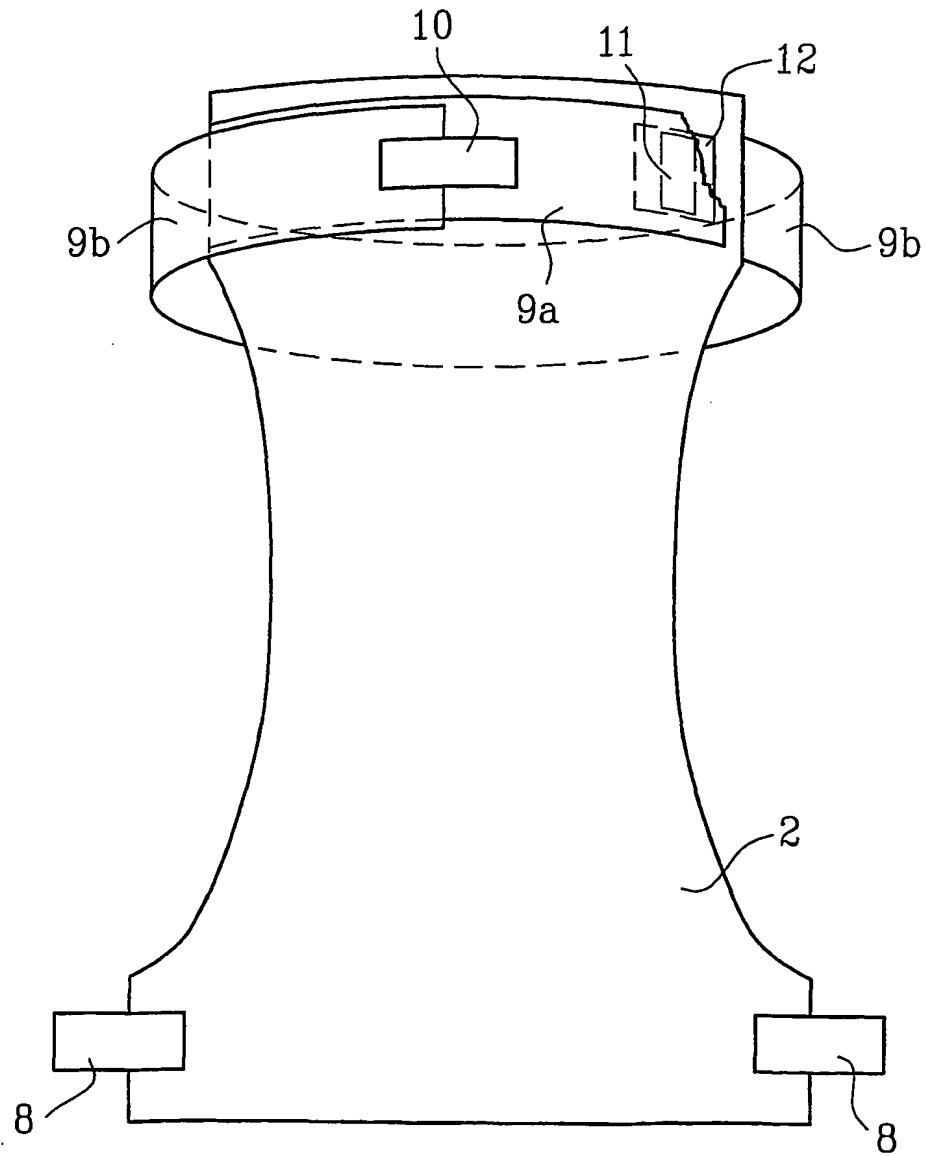


FIG.2

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 01/01947

## A. CLASSIFICATION OF SUBJECT MATTER

IPC7: A61F 13/64

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: A61F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5989236 A (DONALD C ROE ET AL), 23 November 1999 (23.11.99), column 2, line 1 - line 16, figures 1,3, abstract  --	1-5
A	EP 0409307 A2 (THE PROCTER & GAMBLE COMPANY), 23 January 1991 (23.01.91), column 2, line 1 - line 21, figure 1  --	1-5
A	EP 0972501 A2 (FIRST QUALITY ENTERPRISES, INC), 19 January 2000 (19.01.00), figure 6, abstract  --	1-5

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

## \* Special categories of cited documents

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

19 November 2001

Date of mailing of the international search report

04-12-2001

Name and mailing address of the ISA/  
Swedish Patent Office  
Box 5055, S-102 42 STOCKHOLM  
Facsimile No. +46 8 666 02 86

Authorized officer

Tomas Gustafsson/EK  
Telephone No. +46 8 782 25 00

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 01/01947

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 9635402 A1 (THE PROCTER & GAMBLE COMPANY), 14 November 1996 (14.11.96), page 3, line 5 - line 30, figure 12  -- -----	1-5

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/SE 01/01947

Patent document cited in search report			Publication date	Patent family member(s)		Publication date
US	5989236	A	23/11/99	AU	7830998 A	30/12/98
				EP	0988014 A	29/03/00
				JP	2000513639 T	17/10/00
				TW	431884 B	00/00/00
				WO	9856328 A	17/12/98
				ZA	9805149 A	07/01/99
-----						
EP	0409307	A2	23/01/91	SE	0409307 T3	
				AT	142472 T	15/09/96
				AU	647743 B	31/03/94
				AU	655735 B	05/01/95
				AU	5515094 A	05/05/94
				AU	5905490 A	24/01/91
				BR	9003479 A	27/08/91
				CA	2019880 A,C	18/01/91
				CN	1028602 B	31/05/95
				CN	1048798 A	30/01/91
				DE	69028459 D,T	06/02/97
				DK	409307 T	03/03/97
				EG	18823 A	28/02/94
				ES	2091786 T	16/11/96
				FI	100378 B	00/00/00
				FI	903606 D	00/00/00
				GR	3021462 T	31/01/97
				IE	74190 B	16/07/97
				IE	902604 A	27/02/91
				JP	3136652 A	11/06/91
				KR	180011 B	01/04/99
				NZ	234548 A	27/09/93
				PT	94716 A,B	20/03/91
				TR	27286 A	26/12/94
				US	5445628 A	29/08/95
				US	5454803 A	03/10/95
-----						
EP	0972501	A2	19/01/00	AU	719801 B	18/05/00
				AU	5161198 A	29/05/98
				AU	5365999 A	14/03/00
				EP	0941459 A	15/09/99
				EP	1105489 A	13/06/01
				NO	992659 A	13/12/99
				US	6306121 B	23/10/01
				US	2001023341 A	20/09/01
				WO	0011180 A	02/03/00
-----						
WO	9635402	A1	14/11/96	AU	5564396 A	29/11/96
				EP	0957861 A	24/11/99
				JP	10510199 T	06/10/98
				US	5899895 A	04/05/99
				US	5997521 A	07/12/99